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United States Patent [19][11] **Patent Number:** **5,547,861****Nadeau et al.**[45] **Date of Patent:** **Aug. 20, 1996**[54] **DETECTION OF NUCLEIC ACID AMPLIFICATION**[75] **Inventors:** James G. Nadeau; George T. Walker, both of Chapel Hill, N.C.[73] **Assignee:** Becton, Dickinson and Company, Franklin Lakes, N.J.[21] **Appl. No.:** 229,281[22] **Filed:** Apr. 18, 1994[51] **Int. Cl.⁶** C12P 19/34; C12Q 1/70; C12Q 1/68; C07H 21/04[52] **U.S. Cl.** 435/91.2; 435/5; 435/6; 536/24.3[58] **Field of Search** 435/91.2, 6, 5; 536/24.3-33[56] **References Cited****U.S. PATENT DOCUMENTS**

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(List continued on next page.)

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Methods for detecting, immobilizing or localizing primer extension products of a Strand Displacement Amplification reaction which are coupled to, and an indication of, amplification of the target sequence. The primer extension products are secondary, target-specific DNA products generated concurrently with SDA of the target sequence and can therefore be used to detect and/or measure target sequence amplification in real-time. In general, the secondary amplification products are not amplifiable and remain inert in the SDA reaction after they are formed without interfering with amplification of the target sequence. The secondary amplification products may be designed or modified to contain special features to facilitate their detection, immobilization or localization.

20 Claims, 3 Drawing Sheets